Amendments to Claims

1. (currently further amended) A power amplifier system comprising:

a plurality of amplifiers, each of which includes an input that is commonly coupled to a system input port, and each of which includes an output;

a plurality of primary transformer windings, each of which is coupled to the output of one of the plurality of amplifiers; and

a single secondary transformer winding that is inductively coupled to all of said primary transformer windings and sums coupled flux from each of said primary transformer windings and which provides a system output port to which a load may be coupled.

2. (original) A power amplifier system as claimed in claim 1, wherein said each of said primary transformer windings provides at least substantially the same number N of winding turns so that the turns ratio from each primary transformer winding to the secondary transformer winding is $N:1$.

3. (original) A power amplifier system as claimed in claim 2, wherein the current provided by each amplifier is $i_1 = i_2 / (mN)$ where i_2 is the current in the secondary transformer winding, and m is the number of the plurality of primary transformer windings.

4. (original) A power amplifier as claimed in claim 2, wherein each of said primary transformer windings provides exactly the same number N of winding turns.

5. (original) A power amplifier as claimed in claim 2, wherein said system permits mismatch in the number of turns of each of said primary transformer windings.

6. (previously amended) A power amplifier system as claimed in claim 1, wherein said plurality of amplifiers are spatially distributed on a circuit board to reduce localized heating on the circuit board.

7. (original) A power amplifier system as claimed in claim 1, wherein system includes two primary transformer windings.

8. (original) A power amplifier system as claimed in claim 1, wherein said system includes three primary transformer windings.

9. (original) A power amplifier system as claimed in claim 1, wherein said system includes four primary transformer windings.

10. (currently further amended) A power amplifier system comprising:

a plurality of m amplifiers, each of which includes an input that is commonly coupled to a system input port, and each of which includes an output;

a plurality of m primary transformer windings, each of which has substantially the same number N of windings, and each of which is coupled to the output of one of the plurality of amplifiers; and

a single secondary transformer winding that is inductively coupled to all of said primary transformer windings and sums coupled flux from each of said primary transformer windings such that the turns ratio from each primary transformer winding to the secondary transformer winding is $N:1$.

11. (original) A power amplifier system as claimed in claim 10, wherein the current provided by each amplifier is $i_1 = i_2 / (mN)$ where i_2 is the current in the secondary transformer winding.

12. (currently further amended) A power amplifier system comprising:

a plurality of *m* primary transformer windings, each of which has substantially the same number *N* of windings;

at least one amplifier that includes an input that is coupled to a system input port and includes an output that is coupled to at least one of said plurality of *m* primary transformer windings; and

a single secondary transformer winding that is inductively coupled to all of said primary transformer windings and sums coupled flux from each of said primary transformer windings such that the turns ratio from each primary transformer winding to the secondary transformer winding is *N:1*.

13. (original) A power amplifier system as claimed in claim 12, wherein the current provided to each primary transformer winding is $i_1 = i_2 / (mN)$ where i_2 is the current in the secondary transformer winding.

14. (previously amended) A power amplifier system as claimed in claim 12, wherein said system further includes a plurality of amplifiers that are spatially distributed on a circuit board to reduce localized heating on the circuit board.

15. (previously canceled).

16. (currently amended) A power amplifier system comprising:

a plurality of *m* primary transformer windings, each of which has substantially the same number *N* of windings; and

a single secondary transformer winding that is inductively coupled to all of said primary transformer windings and sums coupled flux from each of said primary transformer windings such that the turns ratio from each primary transformer winding to the secondary transformer winding is *N:1*, wherein said system further includes a plurality of amplifiers, each of which is coupled to one of the plurality of primary transformer windings.

17. (currently amended) A power amplifier system comprising:

a first primary transformer winding including a positive input port and a negative input port for providing a first current through said first primary transformer winding in a first positive direction;

a second primary transformer winding including a positive input port and a negative input port for providing a second current through said second primary transformer winding in a second positive direction;

a secondary transformer winding that includes a positive output port and a negative output port and receives an inductively coupled current from said first and second primary transformer windings; and

power amplifier circuitry that couples said first and second primary transformer windings and said [~~second~~] secondary transformer winding such that said first and second positive directions are the same with respect to said secondary transformer winding, providing a summation of said first and second currents at said secondary transformer winding.

18. (previously added) A power amplifier system as claimed in claim 1, wherein said plurality of amplifiers are spatially distributed on an integrated circuit chip to reduce localized heating on the integrated circuit chip.

19. (previously added) A power amplifier system as claimed in claim 12, wherein said system further includes a plurality of amplifiers that are spatially distributed on an integrated circuit chip to reduce localized heating on the integrated circuit chip.

20. (previously added) A power amplifier system as claimed in claim 1, wherein said input to each of said amplifiers is a differential input.

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21. (previously added) A power amplifier system as claimed in claim 1, wherein said output of each of said amplifiers is a differential output.